CHAPTER – FIVE

SOFTWARE AND HARDWARE REQUIREMENTS

5.1 Overview

This section includes the details about the technologies used at various levels.

5.2 Front End Tools

5.2.1 Jupyter

Jupyter Notebook (Formerly IPython Notebooks) is a web-based interactive computational environment for creating Jupyter notebooks documents. The "notebook" term can colloquially make reference to many different entities, mainly the Jupyter web application, Jupyter python web server, or Jupyter document format depending on context. A Jupyter Notebook document is a JSON document, following a versioned schema, and containing an ordered list of input/output cells which can contain code, text (using Markdown), mathematics, plots and rich media, usually ending with the ".ipynb" extension

5.2.2 ggplot2

ggplot2 is a data visualization package for the statistical programming language R. Created by Hadley Wickham in 2005, ggplot2 is an implementation of Leland Wilkinson's Grammar of Graphics—a general scheme for data visualization which breaks up graphs into semantic components such as scales and layers. ggplot2 can serve as a replacement for the base graphics in R and contains a number of defaults for web and print display of common scales.

5.3 Back End Tools

5.3.1 Python Interpreter

Python is an interpreter based programming language and the installation of python interpreter in indispensable running the python commands.

5.3.2 R language

R is a programming language and free software environment for statistical computing and graphics that is supported by the R Foundation for Statistical Computing. The R language is widely used among statisticians and data miners for developing statistical software and data analysis

5.4 Operating System

- Windows 98 and above with python interpreter installed
- Linux
- Macintosh with python interpreter installed

5.5 Additional Software Requirements

- **Python 2.8 or above**
  Python is a widely used high-level programming language for general-purpose programming, created by Guido van Rossum and first released in 1991. An interpreted language, Python has a design philosophy that emphasizes code readability (notably using whitespace indentation to delimit code blocks rather than curly brackets or keywords), and a syntax that allows programmers to express concepts in fewer lines of code than might be used in languages such as C++ or Java. The language provides constructs intended to enable writing clear programs on both a small and large scale.
- **R Studio**
  R Studio is a free and open-source integrated development environment (IDE) for R, a programming language for statistical computing and graphics

5.6 System Configuration

- CPU : 32x or 64x architecture with minimum clock speed of 1 Gigahertz
- OS : Windows, Linux, Macintosh
- RAM : Minimum 2 GHz
- HDD : Minimum 15 GB
- Monitor : Coloured